

Name \_\_\_\_\_

**AST 363 - Final Exam**  
**(Take-Home)**  
**100 points**

**Problem:**

Derive an electrical control problem which can be solved by use of a Programmable Logic Controller. Then write and test a GE-Fanuc PLC program to solve the problem.

**Exam rules:**

1. The exam is to be turned in to Kris in Room 213 Davidson by 5:00 pm Thursday, December 18.
2. You are not allowed to consult with anyone in the AE363 class, or with anyone else.
3. You can use any reference material you want. Your principal reference, and probably the only one you need, is Lab 16 - PLC Tutorial. Other GE-Fanuc books will be in Rm 142 near the simulator.
4. Make and justify any assumptions you need in order to complete the design.
5. There will be an optional class meeting Tuesday, December 16 at 9:45 in Room 110 if you want to turn in your exam or discuss the exam.

**Notes:**

- The problem can be real or hypothetical
- The problem cannot exceed the capability of the GE-Fanuc Micro PLC
- The solution must use at least 6 rungs.
- The solution must use at least one of each of these: Normally open input, normally closed input, normally open coil, negated coil, on delay timer.
- Grade will be based on the creativity exhibited in formulating and solving the problem.
- The solution can use any other capabilities of the PLC.

**Procedure:**

1. Derive your control problem
2. Write a GE-Fanuc program to solve it
3. Key in the program and save it on a disk
4. Load the program and run it on the simulator. It must work.
5. Print out hard-copy of the program.

**Turn in:**

- A word statement of your problem
- Your disk
- Your hard copy
- A word explanation of how it works.